The Nurse–Physician Liaison: How a New Position Can Reduce House Staff Workload

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Implementation of a house staff–medical center interface at this academic VA facility has reduced resident workload and patient length of stay, along with significantly cutting costs.

Time and money are limited commodities in any health care system. The American College of Graduate Education (ACGME) limits the number of hours that internal medicine residents can work in the hospital to a maximum average of 80 hours per week.[1] Proposed ACGME changes, anticipated to take effect July 1, 2011, will further limit work hours, and academic VA medical centers throughout the country must adapt to these changes to maintain ACGME accreditation (see "The ACGME Proposal" on page 30). Because work hour restrictions place increasing limits on the number of hours trainees (house staff) spend in the hospital, further limitations will present a significant hurdle in maintaining continuity of care and achieving efficient patient flow in the hospital setting.

At the George E. Wahlen VA Medical Center in Salt Lake City (SLCVAMC), we have implemented a novel house staff – medical center interface that has significantly reduced house staff workload, decreased hospital "potentially avoidable days of care," and enhanced continuity of care. These improvements translate to substantial savings in both time and money for the SLCVAMC.

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THE EVOLUTION OF OUR PROGRAM

A 1991 internal survey of the medicine service at the SLCVAMC revealed that many residents were spending up to 17 hours a week performing ancillary support services and administrative functions, such as starting peripheral intravenous catheters, transporting patients to radiology, and coordinating postdischarge care (Table). Workload analysis showed a 20% noncompliance rate with current work hour rules (internal data). Subsequent analysis revealed 2 major contributors to this excess workload. First, we found physicians were performing many tasks that could be completed by nonphysician staff. Second, we found that patient length-of-stay was excessive due, in part, to inefficient utilization of discharge resources.

Nursing staff and physicians conducted a review to identify tasks that could be completed by nonphysician staff. Once the review was complete, the SLCVAMC commissioned 2 physician workload reduction (PWR) teams, each comprised a nurse–physician liaison (NPL), a clinical pharmacist, a social worker, and 2 health care technicians. These 2 PWR teams covered 4 medical teams and the overall workload per PWR team is about 20 patients. In 1991, after staff had identified tasks that could be performed by nonphysicians, the NPL, the first member of the PWR team to be used on the medicine wards, began taking responsibility for these tasks.

THE NPL—A UNIQUE NEW ROLE

The NPL is a core support position unique to the SLCVAMC. The NPL's role within the organizational chart initially was controversial. The nursing service did not want to relinquish a full-time registered nurse (RN) equivalent for this position. Instead, the service proposed a "ward" assignment to assist nurse managers with patient services management. The medical service was concerned, however, that the NPL position would eventually be integrated into an RN staff position and would not serve the purpose of reducing house staff workload. The medical service therefore asked that the NPL be assigned directly to the inpatient medicine teams, which would give the NPL the necessary autonomy and flexibility.

The nursing and medical services eventually reached a compromise: The NPL position was placed under the medicine service, but the inpatient nurse manager is responsible for performing the annual performance evaluations. Under this agreement, NPLs meet monthly with the chief of medicine and discuss concerns and trends regarding workload reduction.

The NPL work area is within the medicine team workroom and is key to its success. This close physical proximity to physicians fosters access, communication, trust, team building, and efficiency. The location also strengthens continuity of care, which is put at risk by the rotation of interns, residents, and attending physicians on the medicine team.

The NPL's team duties include:

- Following patients from admission to discharge to better anticipate needed resources
- Solidifying the discharge plan by discussing patient-specific tasks with each resident daily
- Attending work rounds with inpatient medicine teams
- Providing primary support for educating residents about use of a computerized patient record system (CPRS)
- Serving as the primary discharge planner by marshalling resources to meet posthospitalization needs, including primary care and specialty clinic follow up, home health care, rehabilitation facilities, IV infusions, and travel arrangements
- Facilitating dissemination and implementation of administrative policies and procedures, leading to improved compliance with VAMC performance measures
- Developing and improve documentation and ordering processes within CPRS to be more intuitive and resident friendly
- Arranging for adaptive equipment and needs for disabled physicians.

WHAT NPLs ACHIEVE

Constant, close contact with the medical team allows the NPL to discuss patient care and discharge planning with other ancillary staff, further reducing the time the resident physician spends repeatedly discussing patient issues. Further, NPLs' knowledge of the VA system permits them to help the team anticipate pa-

THE ACGME PROPOSAL

The American College of Graduate Education (ACGME) is a private, nonprofit council that accredits about 7,800 medical residency programs in 26 medical specialties involving nearly 110,000 medical residents. Its mission is to improve the quality of health care in the United States by ensuring and improving the quality of graduate medical education for physicians in training. In 2008, ACGME surveyed all 823 U.S. residency program directors in internal medicine, pediatrics, and general surgery.[1] As part of a 3-section, self-administered e-mail questionnaire on potential resident work hour restrictions, program directors responded to 22 items related to changes proposed by ACGME and were asked to indicate which changes were already in use in their programs. They were also asked to indicate their level of agreement or disagreement with the proposed changes, all of which further limit resident work hours.

The ACGME institutional requirements state that "the sponsoring institutions must provide services and develop systems to minimize the work of residents that is extraneous to their educational program" and that "the educational goals of the program and learning objectives of the residents must not be compromised by excessive reliance on residents to fulfill institutional service obligations."[2] The requirements specify that patient support services, such as phlebotomy, laboratory, messenger, and transport services, "must be provided in a manner appropriate to, and consistent with, educational objectives and patient care."[2]

Increasing restrictions on resident work hours, coupled with the mandate to relieve residents of tasks considered extraneous to education, pose several challenges that all VA academic medical centers must overcome to maintain ACGME accreditation and attract and retain talented house staff.[1,3-6]

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Table. How residents spent their time before SLCVAMC program was instituted										
PGY	Providing direct patient care* (h/wk)	Providing education (h/wk)	Performing ancillary tasks (h/wk)	Performing administrative tasks (h/wk)	Supervising (h/wk)	Sleeping on call (h/wk)	Other	No. of trainees	Total h/wk	Average h/wk/ resident
PGY 1	359	118.5	91.5	95.5	31.5	67.5	7	11	770.5	70.05
PGY 2	156	67.75	30	24.5	41.5	49	23	6	391.5	65.29
PGY 3	254	77.5	35.5	49.5	30	19	0	7	456.5	70.42
PGY 4	111.5	38	17	11	9	0	35	4	221.5	55.38
PGY 5	184.5	35	23	30.25	16	0	72.5	7	361.25	50.88
PGY 6	5.5	2	0	0	2	0	32.5	2	42	21
PGY 7	28	0	0	0	0	0	5	1	33	33
Totals	1089.5	338.75	197	210.75	130	135.5	175	38	2276.5	

PGY = postgraduate year; SLCVAMC = Salt Lake City VA Medical Center.
* Reflects actual bedside hours and does not include charting, ordering, note writing, and attending rounds.

tient needs days in advance, allowing for the requisite time to arrange resources.

Three months after the NPL role was implemented, the average patient length of stay (LOS) was reduced by 1 full day. The NPL on the PWR team also reduced intern workload by an estimated 17 hours per intern per week and nearly 11 hours per week per resident for PGY (postgraduate year) 2s and PGY 3s by reducing the number of hours residents spent performing ancillary support tasks and administrative tasks related to discharge planning. Subsequent house staff evaluation revealed that NPLs successfully reduced resident work hours and improved resident satisfaction by allowing the residents more time to focus on patient assessment and clinical decision making. The NPL is the linchpin of the PWR team and plays a critical role in meeting ACGME institutional requirements (see "The PWR Team" on page 32).

While the NPL and PWR teams initially were conceived to reduce resident workload, the resulting decrease in LOS directly translates to substantial savings to the SLCVAMC. With the estimated cost of a medicine bed in the facility at $2,847 per day, and the cost of a monitored bed at about $3,857 per day (based on average costs for fiscal year 2010 through August), the savings add up quickly. Our average volume on the inpatient medicine service ranges from 250 to 300 medicine patients per month. The cost savings per month, attributed in large part to efforts of the NPL, approaches $1 million. This figure does not include other cost savings directly attributable to reduction in LOS, such as less need for transfers to outside for-profit hospitals within the Salt Lake Valley because of unavailability of hospital beds within the SLCVAMC.

Stated another way, the proportion of our inpatient days that were potentially avoidable underwent a steady decline from 39% to 12%, and to as low as 9% (95% confidence interval) from 2001 to 2009. During this same period, the proportion of inpatient days that were potentially avoidable for Utah area Medicare declined from 26% to 20%, and for national medicine VA dropped from 50% to 36%. In other words, our proportion of inpatient days that were potentially avoidable was about 50% lower than that of Utah Medicare claims, and about 66% lower than the VA national average. Our proportion also was about 60% lower than national Medicare claims (28%) (Figure 1).

The reduction in potentially avoidable inpatient days causes no increase

in readmission rates. For potentially avoidable inpatient days, our 14-day/30-day readmission rates are 8.39% and 14.68%, respectively, for internal medicine, compared with 9.87% and 16.06% for VA Rocky Mountain Network (Veterans Integrated Service Network 19) internal medicine, and 11.72% and 19.07% throughout VA internal medicine.[2]

Significantly, SLCVAMC surgical and mental health units, which do not use the medicine PWR and NPL model, did not show the same decreases in the proportion of hospital days that are potentially avoidable as the medicine unit and instead have remained close to national VA and Medicare averages (Figure 2). Reduction in potentially avoidable inpatient days for the surgery service, for example, went from 53% to 34%, and the comparable national VA surgical average was 48%.

THE PWR TEAM

Nurse–physician liaisons (NPLs) are at the core of the physician work reduction (PWR) teams that have been in place at the George E. Wahlen VA Medical Center in Salt Lake City, Utah, (SLCVAMC) since 1991. But the other members of these teams—the clinical pharmacist, health care technician, and social worker—also have important functions.

The clinical pharmacist

A clinical pharmacist is assigned to each team. He or she is positioned within the medicine team workroom and participates in daily rounds. This position has evolved over time, and clinical pharmacists now assigned to each medicine team complete admission and discharge medication reconciliations on all hospital inpatients, guide day-to-day medication management, and help ensure that patients are discharged from the hospital with a safe and appropriate medication regimen. In addition, the clinical pharmacist participates in evidence and guideline-based protocol development and implementation of medication order sets into computerized patient record systems (CPRSs). Examples of protocols developed by clinical pharmacists include anticoagulation management (heparin, argatroban, and warfarin), inpatient hyperglycemia protocol, congestive heart failure medication management order set, community-acquired pneumonia medication order set, and alcohol detoxification order sets.

The clinical pharmacist helps meet American College of Graduate Education institutional requirements by eliminating the time residents traditionally spend performing medication reconciliation and by reducing order entry time with streamlined order sets. Overall, the role of the clinical pharmacist contributes directly to physician workload reduction and enhanced patient safety. Clinical pharmacists also help decrease length of stay and save costs, though these savings have not been directly measured.

The health care technician

Initially, health care technicians (HCTs) were assigned to each medicine team. HCTs were responsible for obtaining medical records from outside hospitals for patients admitted to the SLCVAMC and for those undergoing phlebotomy, electrocardiograms, and peripheral intravenous catheter placement. They also set up medicine procedures and escorted patients to them. With the advent of phlebotomy teams, escort services, and the implementation of the CPRS, however, the need for a single, dedicated HCT for each team diminished, and there now is 1 HCT for all 4 of the medicine teams, who primarily expedites patient discharge. The HCT meets with the NPL early in the day to identify patients ready for discharge and meets with each patient on the medicine service to discuss any concerns the patient or family has about the pending discharge. These concerns then are relayed to the team. The HCT also works closely with bed control, which improves communication between key stakeholders in the control of patient flow.

The social worker

The licensed clinical social worker (LCSW) assesses a patient's psychosocial, financial, substance abuse, family care giving, and other needs. If a patient is not able to return home, the LCSW will work with the patient and family to find the next best place for the patient. This may mean short-term rehabilitation, long-term care in an assisted living center, or various other options. The LCSW also connects patients and families to needed resources both within the VA and outside in the community. Addressing psychosocial issues allows the physicians to spend their time and attention on the medical needs of the patient.

These data, compiled using the Milliman Hospital Length of Stay (LOS) Efficiency Index™, which relies on all patient refined diagnostic related groups (APR-DRG) by severity, suggest that the PWR, anchored by the NPL, is responsible for significant sustained reductions in extraneous inpatient days and overall decreased length of stay.

BUILDING ON THE PROGRAM

Regional VA Flow Improvement Inpatient Initiative Collaboratives were established to look at inpatient efficiency and used this Milliman analysis for best practice benchmarking for avoidable days of care. As SLCVAMC medicine was the best in the VA system, national staff involved with this analysis began to focus on it and asked us to present to the South East and Midwest collaborative groups. In 2006, at the VAMC South East Collaborative conference, SLCVAMC's Rima Nelson, RN, MPH/HSA, presented information about the SLCVAMC medicine service, reporting on the role of the NPL. The South East collaborative report affirmed that the position of the NPL on the PWR team was greatly responsible for these outcomes and stated that the NPL takes "inpatient case management to a new level."[3,4]

FINAL WORDS

The PWR team is a valuable asset to the SLCVAMC's medicine service and is anchored by the NPL. The implementation of the NPL has greatly reduced house staff workload and, during 20 years of refinement, continues to keep its rates of "potentially avoidable days of care" among the best in the VA health care system. Further, the University of Utah highlights the NPL position in recruiting internal medicine residents, because it believes that having NPLs maximizes residents' educational experience and reduces the house staff's service obligations.

The NPLs provide a fast and flexible way to overcome obstacles to patient flow and enhances continuity of care on the inpatient service, where provider rotation is high. Data from the Veterans Health Administration Office of the Assistant Deputy Un-

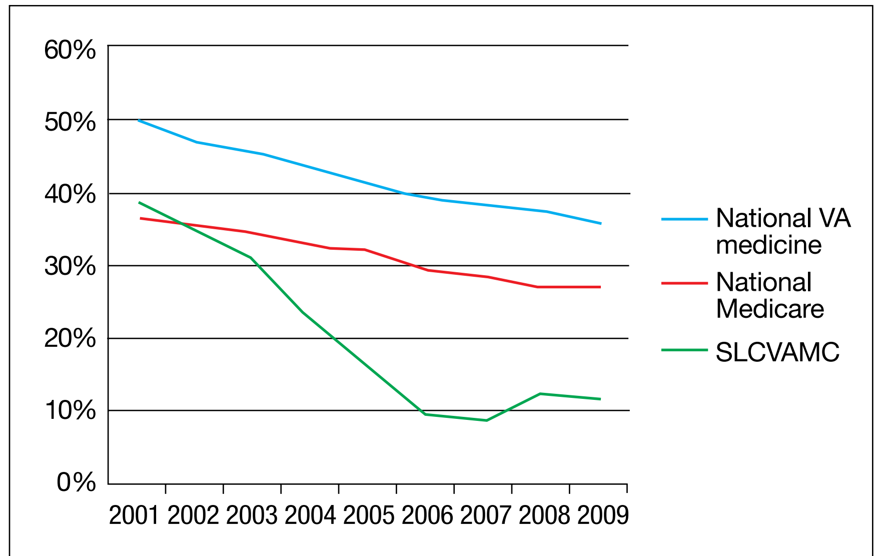

Figure 1. Comparison among national VA medicine, national Medicare, and SLCVAMC of proportion of inpatient days that was potentially avoidable by APR-DRG by severity on medicine units.

APR-DRG = all patient refined-diagnostic related group; SLCVAMC = Salt Lake City VA Medical Center.

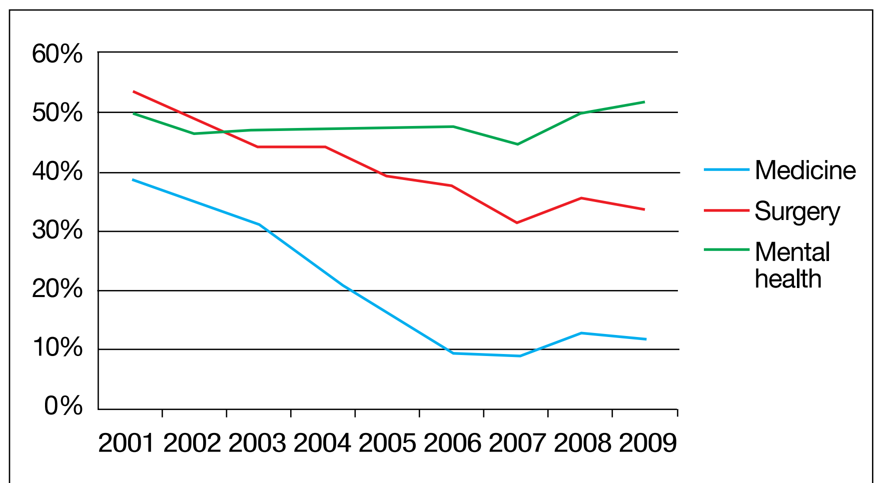

Figure 2. Comparison among units of SLCVAMC of proportion of inpatient days that was potentially avoidable by APR-DRG by severity. Only the medicine unit uses the PWR and NPL model.

SLCVAMC = Salt Lake City VA Medical Center; APR-DRG = all patient refined diagnostic related group; PWR = physician workload reduction; NPL = nurse–physician liaison.

dersecretary of Health for Policy and Planning supports the effectiveness of the NPL in decreasing potentially avoidable days of care at the SLC-VAMC.[5]

As health care delivery evolves to a patient-centered model, resident hours will be further limited. As the veteran population increases, the VA health care system must remain innovative and creative to meet the challenge of delivering a premier health care experience that we can all be proud of and that is deserving of our veterans' sacrifices. The NPL and PWR are great examples of how individual VAMCs can harness creative thinking and initiative to solve problems effectively with a team approach. We think the implementation of an NPL for medicine teams in academic medical centers with medicine residents will realize outcomes similar to ours in physician workload reduction and sustained reductions in "potentially avoidable days of care" with associated cost savings.

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